

Petitions on the Eastern San Joaquin Agricultural General Waste Discharge Requirements



State Water Board Meeting
February 7, 2018
Item 13

Procedural Background

- December 7, 2012: Central Valley WaterBoard adopted Eastern San Joaquin Agricultural General WDRs
- January 2013: Three petitions challenging the General WDRs filed with the State Water Board

Procedural Background

- September 2013: State Water Board adopted precedential Central Coast Agricultural Order
- December 2013: Nitrogen Tracking Task Force issued recommendations
- September 2014: Agricultural Expert Panel issued recommendations

Procedural Background

- February 8, 2016: State Water Board staff issued proposed order
- May-June 2016: Public Workshops and Public Comment
- Fall 2016: Staff workshops
- Spring 2017: Ex parte meetings with agricultural coalition representatives and environmental justice representatives

Procedural Background

- October 10, 2017: Release of second staff-proposed order
- December 6, 2017: Board Workshop
- December 22, 2017: Written comments received
- January 19 and February 2, 2018: Proposed revisions circulated

Summary of Order Requirements

Nitrogen Reporting

Data Kept on-Farm:

- Irrigation and Nitrogen Management Plan (INMP)
- Only growers in high vulnerability areas must certify INMP [**revision from 10/10/17 draft**]
- Certification includes self-certification option

Nitrogen Reporting

Data Reported from Growers to Coalition (Summary Report):

- Nitrogen applied in: irrigation water, synthetic fertilizers, organic amendments
- Crop yield
- Reporting by “field” allows grouping of multiple fields if same crop type, fertilizer inputs, irrigation management, and practices

Nitrogen Reporting

Values Calculated by the Coalition:

- Nitrogen removed based on crop yield and coefficient
- Coefficients to be developed by coalition and approved by regional water board
- Nitrogen Applied/Nitrogen Removed (A/R Ratio)
- Nitrogen Applied-Nitrogen Removed (A-R Difference)

Nitrogen Reporting

Data Reported from the Coalition to the Regional Board:

- Field-level nitrogen data reported to regional board in three tables, with anonymous name and location identifiers
- Regional water board may request names or locations on case-by-case basis

Nitrogen Reporting

Exceptions:

- No nitrogen AR reporting requirements where applied nitrogen is not expected to seep below the root zone in amounts that could impact groundwater and is not expected to discharge to surface water

Nitrogen Reporting

Exceptions:

- Limited or delayed nitrogen reporting:
 - Growers in areas with minimal nitrogen impacts who apply limited amounts of nitrogen and do not have a readily-identifiable yield
 - Socially disadvantaged growers with less than 45 acres and less the \$350,000 gross revenue
 - Growers with 20 acres or less and multiple crops
- [revision from 10/17/17 draft]**

Nitrogen Reporting

Exception to Anonymous Reporting:

- Where a regional water board directly regulates growers without a coalition intermediary, data is reported with names and locations

Use of Nitrogen Data

- Allows coalition to estimate field-level nitrogen over-application and facilitates follow up and outreach with outliers
 - Outliers in high vulnerability areas must have professional certification of INMP or must take additional training for self-certification
 - Outliers in low vulnerability areas must start certifying INMP

Use of Nitrogen Data

- Regional water board can verify that appropriate follow up is conducted and responsive management practices are implemented
- Regional water board may correlate and analyze management practice implementation data and AR data to identify effective management practices
- Regional water board may ask for a focused data set or specific names and locations if warranted

Use of Nitrogen Data

- Allows for development of groundwater protection targets **[revision from 10/10/17 draft]**
- Regional water boards to evaluate field-level data for development of acceptable ranges for multi-year A/R ratio target values

Management Practice Reporting

- Reporting split among three reports:
 - Farm Evaluation,
 - Irrigation and Nitrogen Management Plan Summary Report, and
 - Management Practice Implementation Report
- Farm Evaluation submitted every five years in both high and low vulnerability areas

Surface Receiving Water Monitoring

- Surface water monitoring approach has evolved over time
- State Water Board staff considered whether monitored sites are representative and of sufficient spatial density
- Remand and direction to Central Valley Water Board to convene external expert review
[revision from 10/10/17 draft]
- Not precedential

Sampling of On-Farm Drinking Water Wells

- Nitrate sampling commences 2019 only if no statewide program in place
- Three samples over three years, but may substitute existing data; results reported by lab directly to state database
- Notification provided by grower if sample exceeds health standards
- Central Valley Water Board to develop notification template in appropriate languages
[revision from 10/10/17 draft]

Antidegradation Findings

- Landscape-level, generalized analysis is reasonable for diffuse non-point source discharges
- Maximum benefit and best practicable treatment or control analysis must evolve as understanding of impacts to water quality and methods of control advances [**revision from 10/17/17 draft**]



CALIFORNIA

Water Boards

STATE WATER RESOURCES CONTROL BOARD

REGIONAL WATER QUALITY CONTROL BOARDS

Extra slides

- **[I need to update the slides with new tables attached to 1/19 version – Darrin, if you know how to get those in, could you insert them?]**

TABLE 2

Sample Field-Level Nitrogen Data Reported to the Regional Board by Anonymous Member ID*

Anonymous Member ID	Crop for each field	N Applied via Fertilizer (lbs/ac)	N Applied via Organics/Compost (lbs/ac)	N Applied via Irrigation (lbs/ac)	Total Nitrogen Applied (lbs/ac)	Nitrogen Removed (lbs/ac)	A/R	A-R (lbs/ac)	3 yr A/R
243721	Tomato ₁	180	10	6	196	148	1.3	48	1.3
243721	Tomato ₂	150	0	45	195	60	3.3	135	3.7
243721	Corn, silage	230	0	17	247	210	1.2	37	1.4
341962	Almond	180	5	22	207	140	1.5	67	1.3
810619	Corn, grain	200	0	5	205	120	1.7	85	1.6
810619	Alfalfa	0	0	35	35	510	0.1	-475	0.1
781936	Almond ₁	250	0	0	250	130	1.9	120	2.1
781936	Almond ₂	135	10	31	176	54	3.3	122	3.6

*The data in this table is for illustrative purposes only and does not represent actual data collected. If multiple crop types are grown in the same field over the course of a year or over several years, variations on field nomenclature and crop reporting will be necessary. For example, the field could be identified as the same field in an extra column and an extra row could be added for each crop.

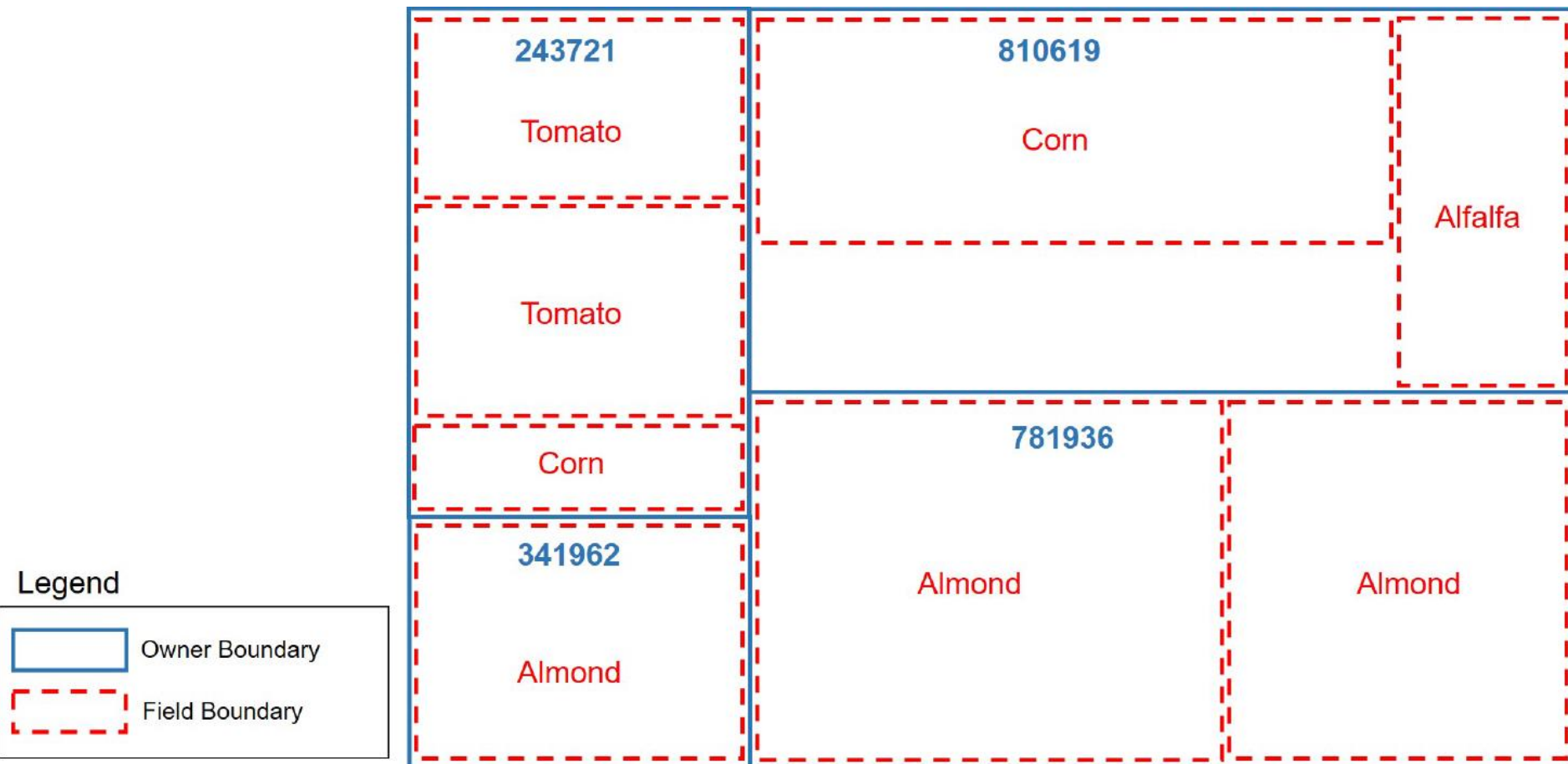


Figure 1. Illustration of Anonymous Member ID, corresponding to Tables 1 and 2

TABLE 3

Sample Field-Level Nitrogen Data Reported to the Regional Board by Anonymous APN ID*

Anonymous APN ID	<u>Groundwater Sub-basin (Per DWR Bulletin 118)</u>	Crop for each field	N Applied			Total Nitrogen Applied (lbs/ac)	Nitrogen Removed (lbs/ac)	A/R	A-R (lbs/ac)	3 yr A/R
			N Applied via Fertilizer (lbs/ac)	via Organics/ Compost (lbs/ac)	N Applied via Irrigation (lbs/ac)					
AQRTM	<u>5-22.02</u>	Tomato ₁	180	10	6	196	148	1.3	48	1.3
AQRTM	<u>5-22.02</u>	Tomato ₂	150	0	45	195	60	3.3	135	3.7
AQRTM	<u>5-22.02</u>	Corn, silage	230	0	17	247	210	1.2	37	1.4
GJZQN	<u>5-22.04</u>	Almond	180	5	22	207	140	1.5	67	1.3
MNOPR	<u>5-22.04</u>	Almond	180	5	22	207	160	1.3	47	1.2
CFRMO	<u>5-22.03</u>	Corn, grain	110	0	5	115	92	1.3	23	1.6
QZIFE	<u>5-22.02</u>	Corn, grain	110	0	5	115	92	1.3	23	1.6
QZIFE	<u>5-22.02</u>	Alfalfa	135	10	31	176	54	3.3	122	3.6
ROTBM	<u>5-22.06</u>	Almond	250	0	0	250	130	1.9	120	2.1
LGTVI	<u>5-22.04</u>	Almond	135	10	31	176	54	3.3	122	3.6

*The data in this table is for illustrative purposes only and does not represent actual data collected. If multiple crop types are grown in the same field over the course of a year or over several years, variations on field nomenclature and crop reporting will be necessary. For example, the field could be identified as the same field in an extra column and an extra row could be added for each crop.

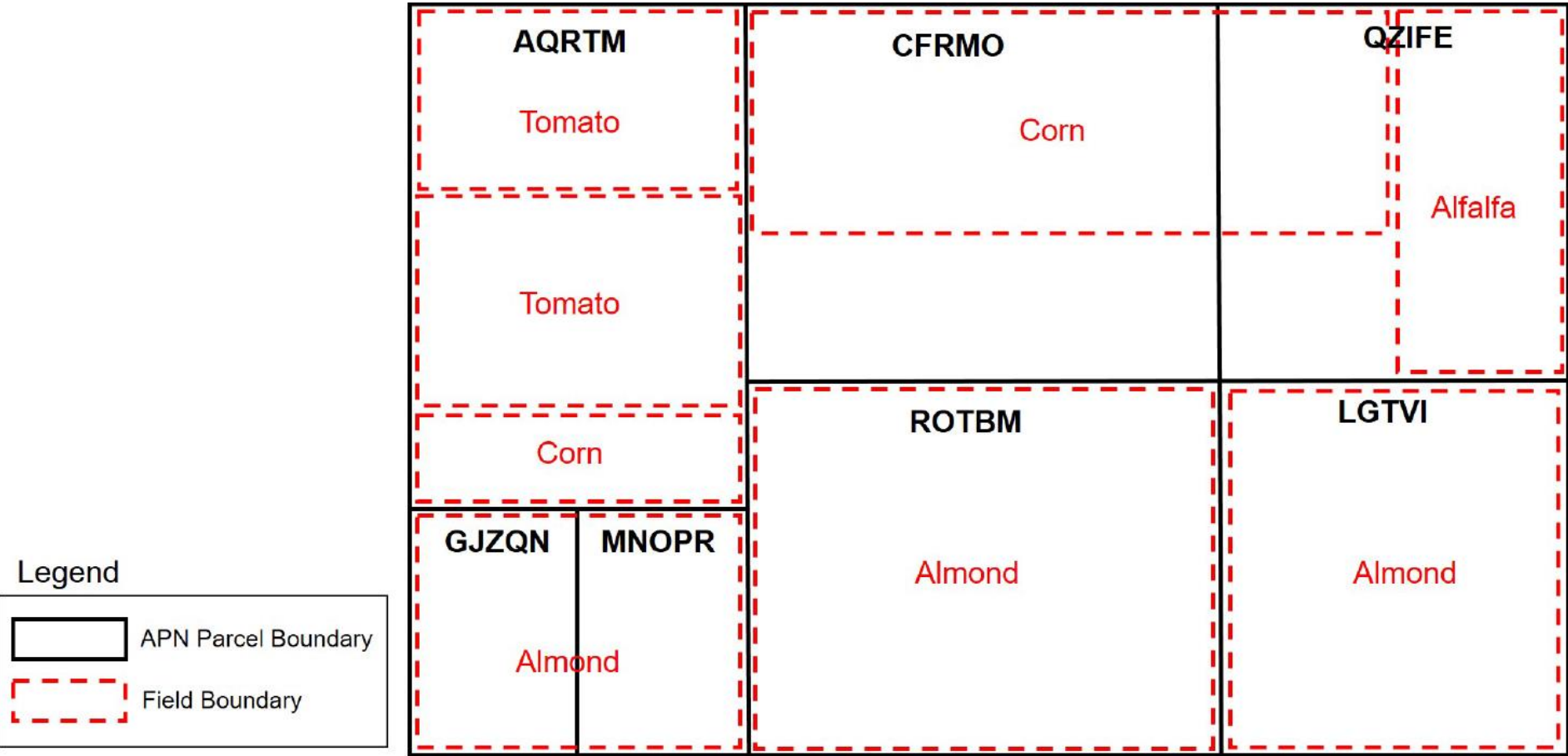


Figure 2. Illustration of Anonymous APN ID, corresponding to Table 3

TABLE 4

Sample Township-Level Nitrogen Data Reported to the Regional Board*

Township Range (TR)	Crop	Total Acreage (ac)	N Applied via Fertilizer (total lbs)	N Applied via Organics/Compost (total lbs)	N Applied via Irrigation (total lbs)	Total Nitrogen Applied (total lbs)	Nitrogen Removed (total lbs)	A/R	A-R (total lbs)
02S07E	Almonds	88	20000	60	2390	22450	22400	1.0	50
02S07E	Corn, silage	54	12420	0	650	13070	11340	1.2	1730
02S07E	Walnuts	35	5250	0	500	5750	3575	1.6	2175
05S14E	Almonds	115	20700	0	3540	24240	16100	1.5	8140
05S14E	Corn, grain	600	66000	250	0	66250	55200	1.2	11050
05S14E	Grapes	112	2800	75	200	3075	3140	1.0	-65
05S14E	Oats	32	--	--	--	--	--	--	--
05S14E	Pistachios	1293	155160	0	3550	158710	108612	1.5	50098
05S14E	Wheat	1040	156000	200	900	157100	104000	1.5	53100
06S09E	Almonds	38	5700	0	705	6405	2052	3.1	4353
06S09E	Corn, grain	2144	235840	0	9858	245698	197248	1.2	48450
07S11E	Almonds	4696	657440	2000	3250	662690	422640	1.6	240050
07S11E	Tomatoes	891	160380	0	9928	170308	131868	1.3	38440
07S11E	Walnuts	105	15750	45	0	15795	8400	1.9	7395
08S13E	Barley	400	57000	200	400	57600	32000	1.8	25600
10S15E	Almonds	9328	2000000	800	14048	2014848	1679040	1.2	335808
10S15E	Corn, grain	387	42570	250	0	42820	35604	1.2	7216
10S15E	Tomatoes	91	12000	30	500	12530	17900	0.7	-5370
10S15E	Walnuts	80	11500	0	50	11550	9600	1.2	1950
11S17E	Almonds	9817	1511000	0	820	1511820	1079870	1.4	431950
11S17E	Corn, silage	54	12420	0	650	13070	11340	1.2	1730
11S17E	Walnuts	760	140000	300	6000	146300	66500	2.2	79800
13S17E	Almonds	1724	410000	0	3760	413760	258600	1.6	155160
13S17E	Tomatoes	186	19500	10	0	19510	1467	13.3	18043
13S17E	Walnuts	189	30000	200	1550	31750	6250	5.1	25500

*The data in this table is for illustrative purposes only and does not represent actual data collected.

TABLE 1

Sample Field-Level Management Practice Data Reported to the Regional Board by Anonymous Member ID*

ID	Data from INMP Summary Report						Data from Farm Evaluation			Data from MPIR			
Anonymous Member ID	Crop	Outlier Notification? (Annual)	INMP Certification Method (Annual)	Irrigation Method	Irrigation Practices (Annual)	Nitrogen Management Practices (Annual)	Pest Management Practices (Every Five Years)	Sediment and Erosion Management Practices (Every Five Years)	Irrigation wells? Abandoned wells? (Every Five Years)	In a SQMP area? (Annual)	Practices implemented to comply with SQMP	In a GQMP area?	Practices implemented to comply with GQMP
243721	Tomato ₁	Yes	CCA	Drip	Measured soil moisture	Evaluated crop nitrogen need; used fertigation	Followed label restrictions	Used off season cover crop	Yes, No	No	NA	No	NA
243721	Tomato ₂	No	CCA	Drip	Weather-based measured soil moisture	Used tissue/petiole testing	Used drift control agents	Stabilized creek and stream banks	Yes, Yes	No	NA	No	NA
243721	Corn	No	Self	Furrow	Tailwater return	Used split fertilizer applications	none	No irrigation drainage	Yes, Yes	No	NA	No	NA
341962	Almond	No	NRCS	Drip	Weather-based scheduleing	Used split fertilizer applications	Used buffer zones	Field is lower than surrounding terrain	Yes, No	Yes	Limited edge of field spraying	Yes	Used split fertilizer application
810619	Corn	No	CCA-N/A	Furrow	Tailwater return	Tested irrigation water nitrogen concentration	Used vegetated drain ditches	Flow dissipaters, stablilitied creed and stream banks	No, No	Yes	integrated pest management	No	NA
810619	Alfalfa	Yes	Self-N/A	Border flood	Laser-leveled fields	none	Applied no pesticides	Used in-furrow dams	No, Yes	Yes	integrated pest management	No	NA
781936	Almond ₁	No	CCA	Sprinkler	Measured soil moisture	Tested soil for residual nitrogen	Mapped sensitive areas	irrigated with drip or micro irrigation syst.	Yes,No	No	NA	Yes	Compost added to soil
781936	Almond ₂	No	CCA	Flood	Irrigation based on crop water need	Tested soil for residual nitrogen	Used end-of-row sprayer shutoff	Planted cover corps or native vegetation	Yes, Yes	No	NA	Yes	Compost added to soil

*The data in this table is for illustrative purposes only and does not represent actual data collected.

Cost of Expanded Monitoring and Reporting Requirements

- Comments Received: Increased reporting requirements lead to significant cost increases for the coalition, the growers, and the Central Valley Water Board

Cost of Expanded Monitoring and Reporting Requirements

Second Staff-Proposed Order:

- Cost analysis based on submitted projected costs in comments

Cost of Expanded Monitoring and Reporting Requirements

Second Staff-Proposed Order:

- Grower direct costs:
 - Primary cost increases in low vulnerability areas for submission of Summary Report (\$110-\$960)
 - Implementation delayed by two years
 - Farm evaluation reporting decreased
 - Drinking water well sampling costs \$40 per sample plus grower time \$110-\$480

Cost of Expanded Monitoring and Reporting Requirements

Second Staff-Proposed Order:

- Coalition Costs:
 - Additional staff for outreach and training in low vulnerability areas; increased costs of mailing, development of anonymous identifiers, compiling field-level data-sets for submission to Regional Water Board, off-site storage of data
 - Cost increase estimated at 10%; may result in increased fees for growers

Cost of Expanded Monitoring and Reporting Requirements

Second Staff-Proposed Order:

- Central Valley Water Board costs
 - With elimination of Regional Water Board staff responsibilities for nitrate exceedance notifications, Central Valley Water Board program costs expected to not increase significantly